UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,742	07/30/2003	Alfred I-Tsung Pan	200206676-1	8919

22879 7590 05/05/2008

HEWLETT PACKARD COMPANY
P O BOX 272400, 3404 E. HARMONY ROAD
INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER	
TENTONI, LEO B	
ART UNIT	**PAPER NUMBER**
1791	

NOTIFICATION DATE	DELIVERY MODE
05/05/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

JERRY.SHORMA@HP.COM
mkraft@hp.com
ipa.mail@hp.com

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/629,742
Filing Date: July 30, 2003
Appellant(s): PAN ET AL.

John S. Reid
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed on 05 March 2008 appealing from the Office action mailed on 08 January 2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is incorrect. A correct statement of the status of the claims is as follows:

This appeal involves claims 1-17, 21-25 and 31-38.

Claims 18-20 and 26-30 have been canceled.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is incorrect.

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows: In Section VI, part (E), the issue is whether claims 21,

25 and 31-35 are unpatentable under 35 USC 103(a) over Ederer et al (U.S. Patent 6,838,035 B1).

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

US 5,510,066 A	FINK et al	04-1996
US 6,405,095 B1	JANG et al	06-2002
US 6,579,479 B1	EDIE et al	06-2003
US 6,838,035 B1	EDERER et al	01-2005
US 6,939,489 B2	MOSZNER et al	09-2005

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered

therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-3, 9-11, 14, 15 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ederer et al (U.S. Patent 6,838,035 B1) in combination with Moszner et al (U.S. Patent 6,939,489 B2).

Ederer et al (see the entire document, in particular, col. 2, line 42 to col. 10, line 53) teaches a process of making a three-dimensional product as claimed, except that Ederer et al does not explicitly teach first and second different liquefied materials (Ederer et al teaches a single liquefied material), which is taught by Moszner et al (see the entire document, in particular, col. 3, lines 41-46; col. 4, lines 5-7; col. 5, lines 44-52; claim 1) and such would have been obvious to one of ordinary skill in the art at the time the invention was made in the process of Ederer et al in view of Moszner et al principally in order to manufacture a three-dimensional product from various materials with a low investment cost.

Claims 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ederer et al (U.S. Patent 6,838,035 B1) in combination with Moszner et al (U.S. Patent 6,939,489 B2) as

applied to claims 1-3, 9-11, 14, 15 and 36 above, and further in view of Jang et al (U.S. Patent 6,405,095 B1).

Jang et al (see the entire document, in particular, col. 6, lines 11-20; col. 7, lines 19-28; col. 13, lines 47-68; col. 14, lines 1-26; col. 19, lines 53-67; col. 20, lines 1-10) teaches a process of making a three-dimensional product including the use of first and second materials of various types, including metals, and such would have been obvious to one of ordinary skill in the art at the time the invention was made in the process of Ederer et al in view of Jang et al principally in order to manufacture a three-dimensional product from various materials with a high build rate and part accuracy.

Claims 12, 13, 16, 17 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ederer et al (U.S. Patent 6,838,035 B1) in combination with Moszner et al (U.S. Patent 6,939,489 B2) as applied to claims 1-3, 9-11, 14, 15 and 36 above, and further in view of Fink et al (U.S. Patent 5,510,066 A).

Fink et al (see the entire document, in particular, col. 3, lines 15-60; col. 17, lines 20-34 and 60-68) teaches a process of making a three-dimensional object including the use of copper as a material, and such would have been obvious to one of ordinary skill in the art at the time the invention was made in the process of Ederer et al in view of Fink et al principally in order to manufacture a three-dimensional object from various materials and have desired characteristics and/or properties.

Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ederer et al (U.S. Patent 6,838,035 B1) in combination with Moszner et al (U.S. Patent 6,939,489 B2) as applied to claims 1-3, 9-11, 14, 15 and 36 above, and further in view of Edie et al (U.S. Patent 6,579,479 B1).

Edie et al (see the entire document, in particular, col. 3, lines 1-4) teaches a process of making a three-dimensional product including the use of silver and tin solder as materials, and such would have been obvious to one of ordinary skill in the art at the time the invention was made in the process of Ederer et al in view of Edie et al principally in order to manufacture a three-dimensional object from various materials and have desired characteristics and/or properties.

Claims 21, 25 and 31-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ederer et al (U.S. Patent 6,838,035 B1).

Ederer et al (see the entire document, in particular, col. 2, line 42 to col. 10, line 53) teaches a process of making a three-dimensional product as claimed, except that Ederer et al does not explicitly teach solidifying any viscous liquid remaining in the voids, which would have been obvious to one of ordinary skill in the art at the time the invention was made in the process of Ederer et al principally because at least some small amount of viscous (support) liquid remains in the voids, and this small amount of viscous (support) liquid solidifies (along with the three-dimensional object).

Claims 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ederer et al (U.S. Patent 6,838,035 B1) as applied to claims 21, 25 and 31-35 above, and further in view of Jang et al (U.S. Patent 6,405,095 B1).

Jang et al (see the entire document, in particular, col. 6, lines 11-20; col. 7, lines 19-28; col. 13, lines 47-68; col. 14, lines 1-26; col. 19, lines 53-67; col. 20, lines 1-10) teaches a process of making a three-dimensional product including the use of first and second ejected materials to form layer portions, and such would have been obvious to one of ordinary skill in the art at the time the invention was made in the process of Ederer et al in view of Jang et al principally in order to manufacture a three-dimensional product from various materials and have desired characteristics and/or properties.

(10) Response to Argument

Appellant argues (pages 4 and 5) that the combination of Ederer et al and Moszner et al does not teach or suggest all of the limitations of claim 1, namely the use of two different liquefied materials (Moszner et al teaches the use of a single material that may consist of two or more components). Examiner responds that Moszner et al does teach the use of two different materials (see col. 4, lines 5-7; col. 5, lines 44-52; claim 1, last two lines of Moszner et al; note that these cited portions of Moszner et al are directed to the use of two different liquefied materials, not just a single material that may consist of two or more components).

Appellant argues (pages 6 and 7) that there is no teaching suggestion or motivation to combine Ederer et al and Moszner et al. Examiner responds that one suggestion or motivation to combine the disclosures of Ederer et al and Moszner et al would be to manufacture three-dimensional products from various materials with a low investment cost (see col. 3, lines 41-46 of Moszner et al). Note also that both Ederer et al and Moszner et al are directed to manufacturing three-dimensional products by rapid prototyping and thus, both Ederer et al and Moszner et al are analogous art. Furthermore, all of the claimed steps were known in the prior art (i.e., Ederer et al teaches all of the claimed steps except for the use of first and second different liquefied materials, and Moszner et al teaches the use of first and second different liquefied materials) and one of ordinary skill in the art at the time the invention was made would have combined the known steps with no change in their respective functions, and the combination of the known steps would have yielded predictable results (i.e., the manufacture of three-dimensional products from various materials in general, and first and second different materials in particular) to one of ordinary skill in the art at the time the invention was made (*KSR International Co. v. Teleflex Inc.*, 550 U.S. ____, 82 USPQ2d 1385 (2007)).

Appellant argues (pages 7 and 8) that Ederer et al does not teach or suggest solidifying the viscous liquid remaining in the voids between solidified drops of the material forming the

object. Examiner responds that solidifying any viscous liquid in the voids would have been obvious to one of ordinary skill in the art at the time the invention was made in the process of Ederer et al principally because at least some small amount of viscous (support) liquid remains in the voids (i.e., it would be readily apparent to one of ordinary skill in the art that 100% of the viscous (support) liquid is not removed from the voids), and that there would be a reasonable expectation on the part of one of ordinary skill in the art that this small amount of viscous liquid solidifies (along with the rest of the material of the three-dimensional product) (*KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, 82 USPQ2d 1385 (2007)).

Appellant argues (page 8) that Ederer et al teaches away from the claimed process because Ederer et al teaches that the supporting fluid remains in its liquid state throughout the production process (citing col. 2, lines 54-58 and col. 3, lines 10-13 of Ederer et al). Examiner responds that this would be the case up until solidification of the three-dimensional product, when all of the material (i.e., the material of the three-dimensional product and any small amount of support liquid which is not removed) solidifies.

Appellant argues (page 8) that the preferred glycerin solution taught by Ederer et al is not capable of being solidified. Examiner responds that Ederer et al is not limited to only a glycering solution as a support liquid. Also, the materials used for the three-dimensional product and the support

material determine the solidification of the product. Furthermore, instant claim 21 is silent as to temperature conditions and thus, this argument is not commensurate in scope with the subject matter of instant claim 21.

Appellant argues (page 8) that Ederer et al teaches preventing any voids from forming within the structure (citing col. 8, lines 1-5 of Ederer et al). Examiner responds that it is the surface of a layer which is smoothed, not the overall layer and thus, Ederer et al does not teach preventing void formation.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Leo B. Tentoni/

Primary Examiner, Art Unit 1791

Conferees:

/Steven P. Griffin/

Supervisory Patent Examiner, Art Unit 1791

Steven Griffin	SPE	GAU 1791

/Yogendra N Gupta/

Supervisory Patent Examiner, Art Unit 1791

Yogendra Gupta	SPE	GAU 1791